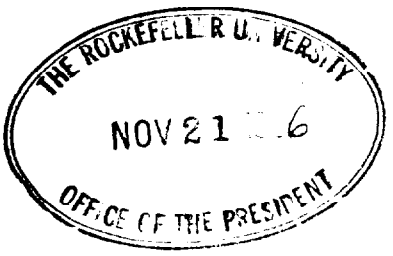
luca

17 November 1986



Dear Josh,

It is difficult to resist the temptation of answering the questions you put to me in your letter of Oct.15. I may add that nothing I have to say seems confidential. The only problem is to answer in a reasonably compact way.

I had no stimulus to go into science from anybody in particular. My father was a sick man at the time of my adolescence, and my mother, who in other ways had extremely positive influence on me, favored other types of jobs. When I first talked of becoming a research worker, she was scared of the poor salaries she knew were asociated with this kind of job; but she did respect my inclinations. I cannot remember any individual who had an early influence on me: but I remember that when I was 16, learning English at Exeter College in S.W.England, I saw real microscopes for the first time and was very attracted by the idea of what one could see with them. I also was attracted by the doctor's profession because of the access it gives to lots of human secrets. I had to decide in that summer on the choice of a University curriculum, although this is normally done at nineteen in Italy, because I had already finished my highschool duties and Medical School is longer in Italy, nut is entered earlier than here. I chose Medicine also because I simply did not know that there was also a school of Natural Sciences. This happened in 1938 and it was a lucky choice, because as a medical student I avoided the draft when the war came.

My first year was in Turin; I was not allowed to start work in a lab until the second year, and began as soon as I could. This was in the lab of Giuseppe Levi, but he was not there anymore, nor were most of his best students. Shortly after the beginning of the academic year, however, I moved to Pavia because of a scholarship I won at Collegio Ghislieri and thad to begin again the search for a laboratory. One in which I managed to enroll was dedicated mostly to histology and histochemistry, but it was not very exciting. I worked in the summers in microbiology, as I told you, with Giovanni Magni; but it was not easy to do the same work during the winter. I also tried working in a pharmacology lab where I could do a little biochemistry (there was no research biochemist) until Adriano returned from the war. Adriano was certainly the person who had the greatest influence on me, of all the people with whom I worked in Italy. I learnt Drosophila genetics, some population genetics and a smattering of statistics from him, as well as ideas on what is sound scientific research. But I was already somehow completely determined to do research in some biological or medical subject, and Adriano was an important factor in the choice of the specific field of research.

On growing up in prewar and war-time Italy: fascists were notoriously inefficient at organization in every respect, except in attracting young boys to paramilitary organizations, which I was part of like everybody else. I had to become sixteen in order to free myself intellectually of fascist influence. There were no very strong signals in one direction or the other from my family, and it took me some time to realize I was being indoctrinated in a false doctrine. Fascism, however, was totally inefficient also in suppressing dissent unless it was truly loud. Or perhaps, you can praise it for having shown some tolerance until the nazis took over in 1943.

The impact of fascism on higher education was devastating. In the early 30's, professors were requested to take an oath of allegiance to the fascist regime; only about a dozen refused, and were fired. Thanks to Enrico Fermi Physics was the only excellent science, and survived Fermi's exodus to the U.S. Math also was good, chemistry and biology less so. Some of the best professors were of Jewish religion or origin, and in 1938-39 (if I remember correctly), under Hitler's influence, Mussolini excluded them from all teaching, but did not really start persecuting them or interning them. Giuseppe Levi, the teacher of Dulbecco, Luria and Levi-Montalcini was one of the of those who stopped teaching, but fid not leave the country. His students who were not jewish remained in Italy; they were good but never became really scientifically well known in the international environment.

There was no real interest in science in fascist Italy. The Italian national academy was a farce, and the president of the National Research Council was a general, Badoglio. He had the intelligence to understand that Mussolini had to go and helped towards this aim in 1943, but he certainly was no scholar, or not even a good general. Only the physicists had the ability to obtain respect and some support without compromising with fascism. University professors who were hired under fascist pressure had an incredibily negative effect on the higher institutions, especially in medicine.

During the war, life proceeded in almost normal ways in Italy and only a relatively small fraction of men were drafted, small at least relatively to what happened in Italy during world war I, or in Germany. Bombings by plane had limited impact until 1943. The major problem was that the inefficiency of the Italian government made it difficult to obtain food at reasonable prices; rationing could not be depended upon because it supplied too small a number of calories even when food on rations could be found. This generated an enormous and well organized black market that caused a very bad inflation. In Germany everything went in the opposite way; rations were scarce but adequate and one could always find what one was supposed to receive; prices were entirely controlled. The very few black marketeers but they were shot. Almost all the male population between 19 and 45 was at war. But in Germany scientific institutions continued working almost normally; there were several foreign scientists at the Kaiser-Wilhelm Institution (now Max-Planck Gesellschaft) including Timofeeff and Zarapkin, who were both members of the Kaiser Wilhelm section of Berlin-Buch, dedicated to research on mutation and effects of radiations. K.G.Zimmer, a German, was with Timofeeff; they and Delbruck wrote an early article on target theory, action of radiations, and the gene. At Berlin Buch there was also another Kaiser Wilhelm Institut of greater size, doing research on the brain; they were among the earliest developers of Electroencephalography. By far the most

important genetics laboratories were at Berlin Dahlem, some 20 miles from Berlin Buch. I met in Dahlem two cytogeneticts, Bauer, and Klaus Patau (who came to Madison, Wis.), as well as a botanist, Melchers (I believe his son is in the U.S.) as well as Kuhn (of Ephestia) who was one of the first to study the biochemical genetics of eye pigments. As far as I can remember, Schrodinger's book became truly important only after the war.

As to my role in keeping Pavia afloat; after Adriano left for Naples there remained in Pavia only empty rooms and no research workers. Adriano really wanted Pavia destroyed and was angry with me and Giovanni because we chose not to move to Naples. Had I not resisted, there would not have been a Pavia section of the Naples laboratory; as the CNR and AEC money was in my name, Adriano had to create the Pavia section, of which I was made director, and which I turned into the CNR lab presently under Arturo's direction. The CNR lab (now institute) was founded on my request ad remained physically asociated with the University dept, for lack of a new building; with the CNR regulations of the time I could not be director of the CNR lab because I was a University professor, and this is the reason why I nominated Arturo as director. It is true that had I left Pavia too early, nothing would have remained there because Adriano was angry with his Pavia University colleagues who had not supported his plans to create locally an international laboratory. Sometime Adriano is credited, wrongly, with the origin of the Pavia CNR Institute, but he really did his best to kill it, at the beginning, and then lost interest.

I hope you received a complete copy of my publications and xerox copies of two early papers; unfortunately they are in Italian. They are not interesting except, perhaps, historically. I am really not proud of them. It is an example of what two medical students could do in Italy during the war, with little help.

I still do not know if I will be able to come to N.Y. on Friday. I do not want to travel repeatedly in economy class when my neck is not perfect, as now, but Unido does not seem able to come up with a business class ticket in time.

As ever

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